I. AMENDMENTS UNDER 37 C.F.R. § 1.142

A. Amendments to the Specification

In the Substitute Specification, please amend the paragraph beginning at page 4, line 14 and ending at page 5, line 3 as follows:

This invention provides distinct advantages over the electrodeless plasma lamps in the background art, such as brighter and spectrally more stable light, greater energy efficiency, smaller overall lamp sizes, and longer useful life spans. Rather than using a waveguide with an air-filled resonant cavity, embodiments of the invention use[[s]] a waveguide having a body consisting essentially of ~~a solid~~ at least one dielectric material ~~which has~~ having a dielectric constant greater than ~~that of air~~ approximately 2. Such dielectric materials include solid materials such as ceramics, and liquid materials such as silicone oil. A larger dielectric constant permits "dielectric waveguides" to be significantly smaller than waveguides of the background art, enabling their use in many applications where the smallest size achievable heretofore has made such use impossible or impractical.

In the Substitute Specification, please amend the paragraph beginning at page 7, line 5 and ending at page 7, line 17 as follows:

Turning now to the drawings, **FIG. 1** illustrates a preferred embodiment of a dielectric waveguide integrated plasma lamp (DWIPL) **101**. DWIPL **101** includes a source **115** of microwave radiation, a waveguide **103** having a body **104** formed of a solid dielectric

material, and a microwave feed **117** coupling the radiation source **115** to the waveguide **103**. Waveguide **103** is determined by opposed sides **103A, 103B**, and opposed sides **103C, 103D** generally transverse to sides **103A, 103B**. As used herein, the term "waveguide" generally refers to any device having a characteristic and purpose of at least partially confining electromagnetic energy. As used herein, the term "dielectric waveguide" refers to a waveguide having a body consisting essentially of at least one ~~solid~~ dielectric material having a dielectric constant greater than approximately 2. DWIPL **101** further includes a bulb **107**, disposed proximate to side **103A** and preferably generally opposed to feed **117**, containing a gas-fill **108** including a noble gas and a light emitter, which when receiving microwave energy at a predetermined operating frequency and intensity forms a plasma and emits light. As used herein, the term "ignition" means initial breakdown of atoms or molecules of the initially neutral gas-fill into ions.

In the Substitute Specification, please amend the paragraph beginning at page 11, line 3 and ending at page 11, line 11 as follows:

Regardless of its shape and size, waveguide body **104** preferably includes a solid dielectric material having the following properties: (1) a dielectric constant greater than approximately 2; (2) a loss tangent less than approximately 0.01; (3) a thermal shock resistance quantified by a failure temperature greater than ~~approxmately~~ approximately 200°C; (4) a DC breakdown threshold greater than approximately 200 kilovolts/inch; (5) a coefficient of thermal expansion less than approximately 10^{-5}/°C; (6) a zero or slightly negative

temperature coefficient of the dielectric constant; (7) stoichiometric stability over a temperature range of about -80°C to about 1000°C; and (8) a thermal conductivity of approximately 2 W/mK (watts per milliKelvin).

In the Substitute Specification, please amend the paragraph beginning at page 13, line 16 and ending at page 14, line 2 as follows:

In **FIG. 1**, outer wall **109** is coupled to window **111** using a seal **113**, thereby determining a bulb envelope **127** which contains the gas-fill **108**. The plasma-forming gas is preferably a noble gas. The light emitter is preferably a vapor formed of any one of a number of elements or compounds known in the art, such as sulfur, selenium, a compound containing sulfur or selenium, or a metal halide such as indium bromide ~~($InBr_3$)~~ (InBr).

In the Substitute Specification, please amend the paragraph beginning at page 22, line 4 and ending at page 22, line 8 as follows:

The dielectric resonant oscillator mode also enables DWIPL **610** to have an immediate re-strike (i.e., re-ignition) capability after being turned off. As previously discussed, the resonant frequency of the waveguide may change due to thermal expansion and/or changes in the dielectric constant caused by heat generated during operation. When DWIPL **610** is shut down, heat is slowly dissipated resulting in instantaneous changes in the resonant frequency of the waveguide.